

Independent Study in Special Topics MAT 487 Spring 2020

Reading Seminar on “V.I.Arnold’s Mathematical Methods of Classical Mechanics”

More textbooks if you want to read:

- J. M. Lee, Introduction to Smooth Manifolds (Graduate Texts in Mathematics, Vol. 218) (2nd edition)
- G. Bredon, Topology and geometry, Springer-Verlag, 1993

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Place : Math Building 5-127

- Please make summary notes of the weekly topic by the day before the meeting
- Students’ presentation during the meeting and discussion
- Some Homeworks

Tentative Schedule

| | Dates | | Topics | Speaker |
|--------------|---------|--------------|--------------------------------------------------|----------|
| 1 | Feb. 3 | | Introduction | |
| 2 | Feb. 10 | | Chap 2. Investigation of the equations of motion | Nikolaos |
| 3 Change Day | Feb. 21 | Friday 8 am | Chap 2. Investigation of the equations of motion | Charles |
| 4 | Feb. 24 | | Chap 3. Variational principles | Ajmain |
| 5 | Mar. 2 | | Chap 4. Lagrangian mechanics on manifolds | Dan |
| No Meeting | Mar. 16 | Spring Break | | |
| 6 | Mar. 23 | | Chap 5. Oscillations | Spencer |
| 7 Change Day | Apr. 3 | Friday 8 am | Chap 6. Rigid Bodies | Marc |
| 8 | Apr. 6 | | Chap 7. Differential forms | |
| 9 | Apr. 13 | | Chap 8. Symplectic manifolds | |
| 10 | Apr. 20 | | Chap 8. Symplectic manifolds | |
| 11 | Apr. 27 | | Choice of Topics In Appendix (30 min * 2 people) | |
| 12 | May. 4 | | Choice of Topics In Appendix (30 min * 2 people) | |
| No Meeting | May. 11 | No Meeting | | |
| 13 | May. 18 | | Choice of Topics In Appendix (30 min * 2 people) | |
| 14 | May. 25 | | ??? | |